The Supplement

TO

The Training School

The Supplement No. 1 DECEMBER 1907
The Training School No. 46

EDITED BY

E. R. JOHNSTONE
HENRY H. GODDARD, PH. D.
MISS ALICE F. MORRISON

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Read Article in this issue entitled "The Summer School."

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TO
The Training School

Entered March 14, 1904, at Vineland, N. J., as second-class matter, under act of Congress of July 16, 1894.

No. 1—46. DECEMBER 1907. 50c. per Annum.

FOREWORD.

Three and one half years ago, with much fear and trembling we issued our first edition of "The Training School." It was intended to be "a monthly statement of the doings of the School for the information of those who are interested." The paper has succeeded to our greatest expectations, is paying its own way and carrying to parents, friends and members of our Association the news items of the School which interest them. But there has been felt a need for something a little more elaborate and in the effort to supply it many little but nevertheless interesting things have been left out of the monthly editions. We present therefore "The Supplement." "The Training School" will hereafter devote itself to its original purpose and "The Supplement" will print the articles of greater length and importance.

We shall follow the Research Department, describing the work that is being done and reporting our problems and whatever we may find toward their solution. We shall tell of our success or failure in solving some of the many problems our public school friends are presenting to us. We shall describe as fully as possible methods and plans in the School Department trying to make our work as helpful as may be to public school teachers who have the same questions presented to them that we have, but with our small classes we may find the answers more easily. From time to time members of our Paidological and Medical Staffs will contribute the results of their special investigations. We shall also present frequently articles upon the Sociological side of the question, work in the Medical Department, Investigations in the Agricultural field and such other matter as will be interesting and valuable to psychologists, physicians, teachers, and sociologists, as well as to parents.

THE RESEARCH WORK.

HENRY H. GODDARD

A BIT OF HISTORY.

On the seventh of December, 1901, occurred the semi-annual meeting of the "New Jersey Association for the Study of Children and Youth." The program was good, probably very good, but it is forgotten and nothing remains but the vivid recollections of the social intercourse among a group of enthusiastic students of education as they sat around the lunch tables. Views were exchanged, theories and practices discussed until all felt that some light at least had been thrown upon the topics under consideration.

At the close of the session three of these men found themselves on the same train bound for Philadelphia, where they would finally separate to go their several ways. So close had become the bond of sympathy and the feeling of mutual help that it was with real sorrow that they found themselves almost at the end of the

trip, and all three felt deeply what was voiced by one of them as he exclaimed, "There ought to be some way by which we who are interested in these social and educational problems could oftener get together as we have to-day for mutual help and encouragement." Then spoke that member of the trio to whom the thing that "ought be" is always the thing that "must be," "I will give you, right now, an invitation to come to Vineland and spend a day. Later I will fix the date and you shall each extend the invitation to such others as you think would care to come."

And that was the beginning. On March 7th, these three and three others met at the Training School, were shown the plant and plan, were entertained most hospitably and discussed some of the problems which the situation suggested. As they departed at the end of the day each man felt that he had passed something more than a pleasant and profitable day.

In the Fall of 1902, Supt. Johnstone again sent out invitations for a similar meeting. Those who had been there the first time accepted the invitation with the feeling that whatever happened the engagement must be kept. A few new friends were brought in and again the day was spent in studying the problem which is so prominent in such an institution. Six months later found the same group again on the grounds and now consciousness began to develop. We could no longer refrain from asking ourselves, "Why do we come here? What is the attraction?" We could not answer intelligently but we began to realize a very distinct feeling that somehow we were here face to face not only with a great problem of great importance but also that its solution was to be found amid these same surroundings.

Again it was the prophet who voiced what was struggling for expression in our slower minds. On June 10, 1903, occurred the annual meeting of the Association having the institution in charge. On this occasion the usual program was varied and an outsider was brought in to address the meeting. The speaker was Earl Barnes, one of the trio referred to above. In concluding his address Professor Barnes said, "To me Vineland is a human laboratory and a garden where unfortunate children are to be cared for, protected and loved while they unconsciously whisper to us syllable by syllable the secrets of the soul's growth. It may very well be that the most ignorant shall teach us most."

Now we had come to full consciousness. We knew now that it was because we were learning some syllables from the secrets of the soul's growth that we came so regularly at Supt. Johnstone's invitation. We now knew why these meetings had kept up their interest and attendance in spite of their absolute informality. For there had been no organization, no membership, not even a name. We had called ourselves sometimes "The Gang", sometimes "The Boys" or "The Good Fellows", and later "The Feeble-Minded Club."

But while we were learning so much on these occasions our ever alert host was beginning to feel that this "human laboratory" should have some organization and that systematic investigation should be carried on for the benefit of science, of the children in the institution and of the educator and teacher.

Not seeing his way clear to put the expense of this work onto the Institution he resolved to himself raise the money by private subscription and start the work at once. The meeting of the Club for the Winter of 1903 was held at Cedarcroft School and at that time Supt. Johnstone announced that he was ready to install a psychologist if anyone could tell him of a suitable person. No one could. But nothing daunted he proceeded to approach a member of the Club and at

the next meeting, which occurred at Overbrook, he was able to announce that that individual—the third of our original trio—had consented to undertake the work.

Sept. 15, 1906, the laboratory was opened and work begun. A year has passed and an assistant has been added. A working plan has been evolved, apparatus obtained and a fair beginning made. A legacy of $15,000 has been willed to the department and there are many other signs that the time was ripe for the movement and that great things are sure to come from the work. But it takes time to carry out the plans and it will be some time yet before the returns begin to come in.

So far as we know, we are the only institution of this kind in the world doing this work, hence there is no guide to follow. The track has to be blazed and everything worked out DE NOVO. It is just six years since that Newark meeting. Perhaps in six years more there may be a longer and more important chapter to write.

THE PLANT AND THE PLAN.

In planning work to be carried on in the Research Department it seemed necessary to keep in mind two lines of usefulness—a broad and far-reaching line of investigation, data for which should be carefully and wisely collected through a long period of years and whose results would not appear until years had passed but which when obtained would be of surpassing value. The other line ought to be a series of short, direct, intensive studies that should have immediate interest and value to all who have at heart the welfare of the children in such institutions, to all who teach or train normal children and to the pure scientist.

For the first we had an excellent illustration and model in the work of Dr. Adolf Meyer, at Worcester, and now at the Pathological Institute, in New York.

Accordingly we have begun a system of "case taking" by which we expect to get complete data relative to the present condition, physical and mental, and the future progress of every child in the Institution. This will all be carefully kept and in the event of death if an autopsy is allowed, the post mortem findings will be correllated with these facts and eventually conditions will become apparent whereby knowledge will take the place of ignorance, science will supercede guess work.

The plan, then, we borrow from the psychiatrist, but the details must be evolved. The psychiartrist deals with a diseased condition. We deal with healthy tho undeveloped mind. He deals with conditions that either have no law or have their own law different from all healthy individuals. Our phenomena follow normal human laws as far as they go. Those laws may be unknown but we believe they are there and will ultimately appear. In the meantime we must collect all the data of all kinds and patiently wait until a clue is discovered by which the meaning of the facts may be comprehended.

We begin with the physical. We weigh and measure each child, note the rate of growth, the time of the appearance of each new physiological process such as teeth, puberty, etc. We watch the child at his play, at his work, at rest. We note his reaction to the various situations in which he finds himself in this little world in which he lives—the Institution. In short we attempt to get all that can be gotten from observation. We try to collect all his expressions spoken, written and worked out.

Then we call experimental methods to our aid and disturbing as little as possible his consciousness and personality we attempt to limit the conditions, eliminate all but a few factors in the hope of thereby discovering the logical connection between

his acts.

If the difficulty of the observational method lies in the interpretation of the facts observed, the difficulty with the experimental method is far greater. How to limit the environment for a limited mind and still leave a usable connection is indeed a problem. But by one means or another after many trials we discover a test that proves satisfactory and shows us some elementary truth about our child. In this way we gradually build up a picture of the child's personality and are able to compare it point by point with the average child of the world. When this plan shall have been perfected two great desiderata will have been attained—we shall know our child, what to expect of him, what he cannot do and how to minister unto him, and we shall have the facts which will enable us to say later, such and such powers and limitations go with such and such peculiarities of physical structure. We shall even be well on the road toward the great goal of all our work—the cause and prevention of the condition.

So much for the great general plan, the permanent continuing work of of the Department. Besides this work there are a great many things of immediate value and interest that ought to be studied. The general question of how does undeveloped mind behave itself? What is the order of growth of the different mental processes as shown by minds that have ceased to grow at various stages of their development? These and many more can be answered by careful and appropriate observation and experiment upon our children.

But besides these questions of interest to the student of mind there is another large group not only of interest but of vital importance to the person who wishes to train mind—and that is every parent and every teacher.

Why is mathematics hard for some children and easy for others? What can be done for those to whom the learning of a language is difficult? All those questions which cannot be answered from a study of the normal child because his mind moves so fast and its operations are so complex ought to be easily answered from a study of these minds that either move very slowly or are stopped altogether in their development. They are relatively simple and easily understood when once we get the key.

Such is in brief an indication of the work of this department as it presented itself to us at the beginning. Fortunately these two lines of work are not antagonistic or mutually exclusive. On the contrary whatever is done to solve any particular problem gives us valuable data concerning every child used in that particular study. And our permanent experiments or tests can, without loss, be so arranged as to furnish material for a large number of special studies.

For the carrying out of these plans the Training School located the Research Department in a large, airy and well-lighted room on the second floor of the Industrial Building. It has been a splendid room to begin in but we have already outgrown it and are now only waiting for some one to put this work on a substantial basis by giving us a small but adequate laboratory building.

A desk, three tables, two filing cases and some chairs constituted the furniture. When it came to the apparatus we were confronted by a difficult problem. What and how much should we buy? What should we make? Much has to be made—either on the place or by some local machinist. But there are other pieces that can be bought or efficient home-made substitutes can be prepared at greatly reduced expense in dollars, but if one's time is counted it becomes a serious question to know how much of such work one can afford to do. We tried to steer a middle course. We made our ergorgraph and even

the kymograph. We bought a Hipp chronoscope, a Smedley dynamometer, a Galton whistle, some tambours, and a Fairbanks scales. We made a spirometer, a measuring rod, an automatograph, an ataxiagraph, an algometer, apparatus for testing muscular memory, for testing co-ordination, winking reflex, rapidity of tapping and much minor apparatus.

We have a fully equipped dark room and have photographed every child in the Institution front and side view, also most of the work done by them in manual training, etc.

In addition to using the above apparatus we are testing more especially the mental processes by the word lists, dictation, etc.

What has been done and the methods of using these tests will be detailed in the next section.

WHAT WE HAVE DONE TO DATE.

Naturally a large part of the first year has been occupied in ways that make little show. Indeed for many reasons it seemed wisest to attempt little systematic work, but rather to devote a large part of the time to getting acquainted with the children and the conditions under which they live and work. In order to obtain results of value it was of vital importance that the new department should be regarded in the right light by the entire institution, children, officers, and employees. A child coming to the laboratory to be tested must not come with the slightest fear or trembling, nor yet with great exultation. Accordingly a few children were brought in and given perhaps a few simple tests which were alluded to as "playing with this" or they were shown things or had their pictures taken. They were always sent home with the invitation to come again. Meanwhile I have visited the children in their cottages, joined in their entertainments, watched them at work in school, in the shop, on the farm, about the house or about the barn, until I am as much "a matter of course" as anybody or anything on the grounds. While they have gotten acquainted with me I have gained three very important things—a personal acquaintance with them, a vastly deeper insight into the problem and perspective.

One may have the most intense scientific interest but he cannot escape the humanitarian side. The bettering of these children and the helping and protecting society at large by thus taking out of general competition those who are unable to compete, are thoughts which are ever present and which dominate one's action at all times. Where so many fertile fields are before one and rich reward is promised in so many directions a correct perspective is of great importance. Such perspective can only come from living with the problem for a year at least.

Besides the children our work is largely dependent upon all the people in the Institution. We must have their help if we would improve all the opportunities. But if one expects help of the useful and valuable sort one must be helpful. Accordingly some of our time has been spent in trying to be generally helpful.

Again our work has already become quite generally known and many visitors come to Vineland to see the laboratory and learn our methods. Time spent with such people is as a rule not wasted. We get many suggestions from our visitors and often friendly and helpful criticism.

The Training School was urged to send an exhibit to Jamestown and in connection with the data sent in regard to the children selected as types it was desired to have the record of their "mental tests." This led us to formulate—perhaps prematurely—at least earlier than we should otherwise have done, our plan. However, it has proved to be a good tentative outline. While we are making some

changes in it and have already added a number of new tests, we shall probably carry it through at least once with our children.

We are also using the tests given by Dr. Norsworthy in her work with defective children. These tests, in their details, that is, in the words chosen, are not very well adapted to our children, but we are using them because we have in her book the normal standards for comparison. We shall use these once or twice, after which we shall use our own lists, made of words taken from the child's environment and therefore familiar to him. It would seem to be safe to compare such a revised list with the normals in Dr. Norsworthy's list. It is not the knowledge of particular words that we are seeking but memory and association, and given two sets of words of the same general character and each familiar to the person upon whom it is used and a comparison of the power of memory or association is surely legitimate.

The following is the list of tests used:

1. Standing Height.
2. Sitting Height.
3. Weight.
4. Lung Capacity.
5. Grip.
6. Ergograph.
7. Knee Jerk.
8. Winking Reflex.
9. Ataxiagraph.
10. Automatograph.
11. Muscular Memory.
12. Form Board.
13. Tactual Memory.
14. Sight and Touch.
15. Rate of Tapping.
16. Co-ordination.
17. Throwing at Target.
18. Algometer.
19. Can Child Talk ?
20. Read ?
21. Write ?
22. Count ?
23. Has Weight Illusion ?
24. Tests for Chorea.
25. Thread Needles.
26. Tie a Knot (Shoestrings.)
27. Obey Command.
28. Walk Board.
29. Stand on One Foot.
30. Draw a Straight Line.
31. Maze Test.
32. "A" Test.
33. "a—t" Test.
34. Memory—
    (a) Related Words.
    (b) Unrelated Words.
35. Dictation.
36. Association.
37. Noun Test.

The words used in test No. 34 are the following:

Related—(a) River, water, brook, flow, ice, cold, winter, snow, sled, skate. (b) School, teacher, book, desk, pen, read, write, add, spell, word.

Unrelated—(a) Red, dog, buy, day, never, sing, boy, sick, tree, can. (b) Long, green, arm, inch, dress, run, true, knife, break, friend.

The Dictation Test will be found on page 20.

The reader unfamiliar with Psychology will appreciate an explanation of some of these tests.

6. With the ERGOGRAPH we test the endurance or the way one gets fatigued. A weight is lifted with one finger, every alternate second until the muscle is tired out. By suitable arrangement every lift records itself by a line. The total lift and the relative lengths of the lines are valuable indications of mental and motor action.

8. The WINKING REFLEX is tested by placing a heavy piece of glass in front of the child's face and striking the glass lightly with a padded hammer. The eyes wink at first but later one learns to control them.

9. The ATAXIAGRAPH is an apparatus for measuring the amount that one sways when he tries to stand as still as possible.

10. The AUTOMATOGRAPH likewise measures the automatic

movements of the hand when one tries to hold it still.

11. MUSCULAR MEMORY is tested by having him slide his finger along a yard stick until he comes to a block ,then the block is removed and starting at the beginning he tries to slide his finger along the yard stick just as far as he did before, eyes closed.

12. The FORM BOARD is a board with ten different shaped holes in it. There are ten blocks which the child must fit into these holes as quickly as he can.

13. TACTUAL MEMORY is tested by finding whether he knows the difference between a new block that is put into his hand and another one that he has just handled (eyes shut all the time).

14. "SIGHT AND TOUCH" is a test to discover whether a child knows by sight a block that he has just handled with his eyes shut.

15. TAPPING is a test of motor control and consists in tapping a telegraph key as fast as possible. An electrical recorder gives a graphic record which can be counted at leisure.

16. CO-ORDINATION is tested by trying to touch in succession a series of round discs varying in size from one inch down to one thirty-second of an inch, with a metal point about like a pencil point. The discs are set in a metal plate and electrical connection is made with the point so that when one misses touching the disc and touches the plate a bell rings.

17. Throwing rubber balls at a large TARGET from a distance of about fifteen feet tests the co-ordination of the eye with the larger muscles just as the previously mentioned apparatus tests the co-ordination with the finer muscles of the arm and fingers.

18. The ALGOMETER measures the sensitivity to pain. A blunt point or a disc is pressed against the skin until it is just noticeably painful. The amount of pressure exerted is measured by the tension of a spring, and recorded in pounds or kilograms.

23. If two blocks of wood of very different size are made to weigh the same, the smaller always seems the heavier to the normal person over six or seven years of age. This is the WEIGHT ILLUSION. Many of our children do not have the illusion.

31. THE MAZE may be described as a white pathway about one-eighth inch wide bordered by black lines and laid out with many windings and turnings. The person tested is required to trace a line along this path without touching the bounding lines—or with as few touches as possible. The number of touches in a given distance covered is the basis of comparison.

32. "A" TEST. Quickness of perception and of movement are indicated by the number of A's found and marked in a page of mixed letters of the alphabet.

33. More intelligence is required to mark words and those only that contain the letters "a" and "t". Time allowed is two minutes for the latter and one minute for the former.

34. MEMORY is tested by reading to the child a list of ten words and noting how many he can repeat at once. The average of two lists is taken. Two kinds of lists are used. In the first the words are related to each other, e. g., "winter, snow, sled," etc.; in the other the words are as nearly as possible unrelated, e. g., "dog, red, buy", etc. Short sentences are also used—"Dictation."

36. ASSOCIATION, or better, the control of association is tested by determining to what extent the child can think of some particular KIND when a CLASS of objects is named ("G. S.." genus-species) and secondly if he can tell the whole when a part is named ("P. W." part-whole). Third if he can give the OPPOSITES of words. Prepared lists of

words are used for this purpose and the number correctly given is recorded.

37. The last topic on the list designates a test of the child's ability to hold an abstract idea. Of a list of words he is told to indicate which ones are names of "things"—nouns.

Besides those given in the list we have tests for attention, judgment, reasoning, imagination, and the keenness of the senses. Association times are also measured.

DIFFICULTIES TO BE OVERCOME AND RESULTS.

The psychologist will appreciate the difficulty of testing individuals who do not talk or cannot follow directions or who have little or no power of voluntary attention. All these difficulties confront us and sometimes are nearly or quite insurmountable, e. g., many children cannot be taught to blow the Spirometer at all and only the very brightest can get the full advantage of a complete inspiration and expiration. The dynamometer likewise cannot be used by all, tho this is a failure that is significant of lack of brain power and so is quite as valuable as success. A boy frightened at an insignificant thing so that it took six men to hold him could not squeeze a pound on the Dynamometer, tho he clearly understood what was wanted. Many children have an exaggerated Knee Jerk, while some have a very sluggish response or none at all. The same thing is shown by the Winking Reflex. The Ataxiagraph shows very few exceptions to the rule that our children sway greatly from side to side in contrast to the forward and backward swaying of normal adults. The Automatograph is proportionately much better controlled.

One writer says that a feeble-minded child never gets fatigued, because the moment the slightest fatigue appears he stops his exertions. This may be approximately true of the low grades. It is a fact that with all but the very highest it requires much encouragement to keep their attention constant enough to make a fatigue curve. Indeed so great are these fluctuations that we are planning to make a comparative study of them as an indication of the relative power of attention. It is practically impossible to get the children to keep in time with the metronome and they will not work at all if the weight is too heavy.

There is perhaps no one test that is so suggestive as the Form Board. Not only is the time required to put the ten blocks in their places, significant, but the way in which it is done is most suggestive. A few know the forms by sight and put the blocks in place promptly, any slowness being due to movement only. Others have no idea of the form by sight and proced by trial and error. Some have a little method and some none at all. The sizes and shapes of the blocks are so adjusted that no block will go into any hole but its own, otherwise most children would be quite satisfied to leave a block in any hole regardless of whether it belonged there—so imperfect is their idea of form, and the fitness of things.

Some cannot be taught to tap. All are much slower than normal. When told to go faster they only go HARDER.

The ordinary test for Co-ordination works well until the child has once missed and heard the bell ring, then he tries to hit the spot, with an inward hope, as it were, that he will miss it so as to hear the bell ring again. So noticeable was this that we found it necessary to change the plan and arrange the apparatus so that the bell rings when he touches the spot. This was easily accomplished by arranging a series of metallic discs on a non-metallic base.

We use both forms and so marked is the difference that we propose to compare the two results as another

measure of the child's interest.

The question has been raised whether it is fair to have the girls throw balls at a target.

As a matter of fact however they make as good a record as the boys. Perhaps the relatively short distance that they throw and the light balls used may not involve the anatomical difficulties usually encountered by the woman's throw.

The Algometer shows two somewhat abnormal types—those who are abnormally sensitive and those who are abnormally dull to pain. The latter condition also involves a puzzling phenomenon. We usually take as the pain threshold the point where the child winces or contracts the muscles of his face in some way. But if we go on beyond this point the child frequently declares it does not hurt. If we tell him beforehand to tell the moment that it hurts, many a child lets us go to the limit of the apparatus without wincing and with the positive declaration that it does not hurt. With normal children this would be interpreted as grit—the determination to stand it no matter what comes. But with children whose most universal characteristic is a lack of will, it is difficult to conceive of their holding to such an idea in the face of the pain. Or shall we say that this sort of stolidness is a primitive instinct like the Indian's submitting to torture without showing that it hurts and that we have here tapped an instinct in these children that is deeper than pain? If this prove to be the case it can be used to great advantage in training. It must receive further study.

As is to be expected many of the children show signs of chorea. There are also a few cases that raise the question whether in these children the usual signs indicate chorea. This must be further investigated.

The Norsworthy tests all have the disadvantage of involving more or less of attention which our children largely lack. Indeed it is very doubtful whether any such test with feeble minded children does anything more than test the attention in different ways, except where the results are compared, not with normal children, but with other tests of a similar kind on feeble-minded children, e. g., any difference discovered between the number of words remembered in a list of related words and unrelated words would well show whether the relationship was perceived since the difficulty of attention is present in both. But to say that a feeble minded child has half as much memory as a normal child because he remembers half as many words out of ten, may be very far from the truth.

In connection with the dictation sentences used, a rather interesting point has been noticed which is elaborated in another section of the paper.

We have tested enough association times to confirm the usual understanding that they are slower than normal. Here again the part that speech plays is very great and it is difficult to deal with those children who do not talk.

We have not yet tested the senses on account of the difficulty of getting an accurate response. A member of the Paidological Staff has invented what promises to be a very satisfactory audiometer and is at work on an improved sight test. When these are ready we shall get these records.

From some tests made by a gentleman from Philadelphia a couple of years ago it would appear that color blindness is unusually rare among the children.

We hope in the near future to extend these tests and complete the records. Some of this data will be available for special studies.

THE FUTURE.

It has been asked how long this research work will be carried on? Until the cause of feeble-mindedness is known: until its prevention is under-

stood: until perfect methods of care and treatment of such persons are discovered: until all that can be learned from these special cases of mental development has been found out.

We are not contemplating the end of this work. We are only beginning to glimpse its possibilities.

All that the future will bring forth no one can say. But we expect some very large developments at no distant day. When I say we "expect" I do not mean to imply that we have everything provided for a great extension of the work. We have not, but we know the need: we believe it is a need that will appeal to people who have the means and the inclination to help along all work that promises to bless humanity.

We believe that there is somebody who will be ready to give us funds for a commodious and adequate laboratory building in which our work can be carried on with that accuracy and completeness which its importance demands. We believe that there is someone willing to endow liberally such a work so that it can be carried on with that perfect adjustment of means to ends which can only come when one is free from care as to "where the money is coming from."

With the building and the endowment we shall be able to have ample clerical force and to carry on extensive studies into the nature of the mental processes. We shall be able to employ an expert physiological chemist who will study into the conditions of metabolism in these children, the way in which they are affected by various foods and medicines, the rate of assimilation and secretion and the numerous problems that arise when we consider that we are dealing with an organism in which chemical changes are constantly going on and that a slight variation in the nature of those changes may work marvellous results in the nervous system and consequently in the mind that is dependent upon it. It is well known in medicine that caffein stimulates the intellect. Who knows that some of the products of a slightly tho permanently deranged digestive system do not produce a chronic dullness of the intellect?

With an ample endowment we shall be able to send out a trained person to visit the homes of these children and by careful and clear explanation of the problem and what we need to solve it, elicit facts that have been overlooked in answering the questions in the admission blanks—facts that will be of untold value in the solution of the problem of cause and prevention.

Until laboratories are established in other institutions we may well be a clearing house for a great deal of data which has accumulated in the ordinary routine in many an institution.

Some of these things we are already carrying on in a limited way, necessarily much hampered by lack of facilities. We believe that the future will see us much better equipped.

RESCUE THE DEFECTIVE CHILD.

(A plea for the best chance to become a good citizen.)

J. Madison Taylor, M. D., Phila., Pa.

We all wish to see children have fair play. This instinctive desire applies especially to those who are not strong or aggressive. No decent citizen will, however, fail to help any child. All undeveloped, weakly, shrinking persons, young or old, invite our aid. Among primitive people those who are marked by witlessness, imperfections of the mind, are assumed to be favorites of the gods and become the special charge of those who are strong and wise. In our hurried, self-seeking civilization these good impulses to help are too often obscured by competitions. Weakness of the mind in another is too often resented. The sufferer is selfishly pushed to the wall, trodden

under foot, or, if found in the way, disturbing the rhythm of things, punished without reason.

A large proportion of mankind are not endowed with normal reliable forces; at least, not such as can be depended upon to develop along the lines of common opportunity. And yet many of these individuals can be made to become useful citizens when they are provided with judicious guidance, can be urged into such channels of action as are suited to their inherent powers, can be taught to select and remain in lines of industry for which they have abilities. Mischoice of calling is often as fatal as are inherent defects.

Many mental abnormalities are not originally brain faults, but rather the effect of mere physical limitations. This pertinent fact is well known to educators. Medical inspectors have massed and classified the evidence overwhelmingly. Physical defects inducing mental backwardness and yet of moderate degrees, are for the most part altogether removable. They consist mainly in the frequently encountered adenoids interfering with breathing, poor vision and lowered nutrition. These are all exceedingly common among school children.

Moreover, these physically defective ones, taken as a class, constitute the inferior scholars. Poor eyesight especially lowers the standards of scholarship. Even more striking is the intellectual disturbances found among those who suffer from the effects of the nose and throat obstructions; the chief ones are the prevalent adenoid growths. The watchfulness and urgency of the medical profession has thus contributed enormously to emancipating a large proportion of these unfortunates. They have thereby done much to elevate scholarship and help the educator.

It is an act of necessary justice to both the normal and the defective children to separate, classify, and remedy in various judicious directions. Defective children should be divided into three groups: (1) The merely backward; (2) The feeble minded; and (3) The incorrigible, truant or vicious ones.

Those distinctly feeble minded should be grouped into sub classes and specially taught according to their varying needs. Some must be placed in institutions where they will get the kind and quality of training best adapted to their limited capacities. If left in association with children of the highest mentality the latter are seriously injured.

A large proportion of these unfortunates can be made to become exceedingly useful members of society if the defect or difficulty is promptly discovered and skillfully corrected. It is the duty of the municipality to give each school child a full chance to attain wholesome citizenship. The public schools are devised to do this. Altho large sums of money are set apart for schools, nevertheless, it is never half enough to accomplish such economic results as should be forthcoming. The wealth of a nation lies in the capacity of each citizen to earn. Opportunity must be supplemented by wise, expert guidance, especially of the growing child. Experience has shown that in every city of the first class it is necessary to set apart a certain number of special schools wherein those who are different from the average shall receive such training as each one may need. Notwithstanding this excellent provision, and the care exercised by both teachers and medical inspectors, those who are sent to the special schools are mostly truants, badly brought up, ill-trained, rebellious, sulky, mischievous or the like. There yet remains in the regular schools a host of well-behaved, atypical children who possess peculiarities, defects, of one kind or another, deserving of attention.

The one feature which fails to be adequately estimated, yet is of greater importance than any other, is the

actual condition of the mind. It is true that to rightly accomplish this requires a definite increase in the degree and quality of expert medical inspection. The work of the regular inspector is large enough. He has plenty to do, often more than he can well perform. Furthermore, he is rarely trained to such a degree as to more than recognize gross departures from normal mentality. The problem is often not so much the presence of actual mental disease, as the existence of morbid tendencies and peculiarities, often slight, obscure, yet deeply significant.

This does not necessitate so large a separation and classification, hence stigmatization, that the work of the schools need be materially increased. It is mainly a question of timely appreciation of needed remedies, sometimes only temporary, including gradual improvements in methods of instruction to meet our awakened needs. The first step is to make sure that our medical inspectors furnish evidence of knowledge in the primary laws of childhood psychology, in mental evolution, hence of deviations from the normal. Our teachers in all schools should likewise know so much of this as shall make them able to recognize and appreciate, hence to co-operate.

To do our duty by the city, hence the state and nation, we ought to have the supervision and constant aid of one or more first class mental experts, familiar at the same time with the diseases of childhood. The duties of such an expert adviser should include giving instructions to the medical inspectors, affording them succinct and clear guiding lines for action. He should be ready to assist in solving the problems which will inevitably arise. By this means there would undoubtedly be effected an enormous saving of efficient intelligence, increments of utility, the output of a vastly greater number of wholesome adolescents, hence a fuller supply of good citizens. All money and effort thus expended would so largely redound to the aggregate economies as to prove of incalculable good.

We are becoming as a nation, somewhat suddenly, yet painfully aware of a large group of "undesirable citizens". This term excellently describes a formidable group found in every community. They are only too plentiful among those of both high and low degree. They are bereft of a broad sense of responsibility and work inevitable mischief in proportion to their abilities and opportunities. Whether bad originally, or only defective, they only too readily assume the color and character of dominant persons. These are, unfortunately, too often vicious and shrewd to use tools made ready to their hand. Selfishness is a potent impulse; conscientiousness requires much encouragement. The sense of justice, of honor, of moral obligation, while instinctive, is readily obscured where temptations abound to seize upon means of enjoyment. In America it seems that our exuberant, diffusive, acquisitive tendencies are inadequately safeguarded by wholesome traditions, by well enforced civic and other regulations. Law appears devised to protect the coward, the vicious, "the man with the pull", rather than to mete out strict justice to the honest citizen. Hence arises an increasing body of flagrant defiers of constituted authority.

The genesis of these undesirable citizens, apart from the definitely vicious, will be found among children defective in various directions and degrees. A fair proportion of these would have developed, undoubtedly, into decent persons under favorable influences. The student of human economies is fully aware of the overmastering potency of malevolence; the attractiveness of brilliant knavery. The clan instinct, too, strong in us all, attracts the waverers. Hence those of feeble mind and purpose are

the clay of which "political leaders" make henchmen, heelers, district workers, useful men, cat's paws or worse.

The cure of vice is to exercise wholesome influences upon the inchoate mass of budding humanity and turn them to paths of decency, self-respect, moral obligation, hence good citizenship.

This can, and should be, initiated in the schools. The child, at best, is clay, to be moulded well or ill. It is pre-eminently necessary that the defective child should be provided with an overplus of beneficent agencies. Not only must he be safeguarded from malignancies, but it is of paramount importance for him to secure wise aid in education, in choice of calling, also tolerant counsel in the revisions often made necessary, always encouragement in the pursuit of right aims.

We must not accept these undesirable citizens as a "visitation of Almighty God," but purge the land of pestiferous evil workers by correcting the evils at the fountain head. They are menaces to our national integrity. The cure is to supply the school child as good or better training in the duties and responsibilities of citizenship as he would get in a good home. Furthermore, we should furnish expert medical inspectors who shall estimate the variants in mentality and morality, along with wise recommendations as to the character of special education needed.

Our increasing knowledge of the physical defects of school children is due to the systems of school inspection existing in our larger cities. These are particularly efficient in Philadelphia, New York and Boston. Dr. Thomas G. Beatty, who has charge of the medical inspection of the schools of Philadelphia, states that thirty-six per cent. of all children would be benefitted by medical attention. A majority of these suffer from eye-strain, and a movement is now on foot to supply eyeglasses free to the children of the poor.

In New York, Dr. Cronin states that nineteen per cent. of all school children are suffering from the lack of medical attention, while practically fifty per cent. of the whole number show physical imperfections of some sort or other, on close inspection. Dr. Cronin has recently succeeded in establishing five dental dispensaries for the preservation of the children's teeth.

The retarding influence of eye-strain, adenoid growths and poor nourishment has also been accurately demonstrated.

Dr. Walter Cornell, of Philadelphia in a series of studies on school children, has shown that each of these subtract definitely from the school average of the pupil.

Health, education and the attainment of the highest type of citizenship demand all practicable aid for these unfortunate children. Not only in the larger cities, but in the smaller towns, should the intelligent care of the pupils of the schools be insured by systematic medical examination.

Thus can we rescue from evil fates the atypical, the defective child and set his feet in the paths toward sound citizenship.

SOME REASONS FOR MENTAL DEFICIENCY.

E. R. JOHNSTONE

Careful study thru a number of years by many men especially qualified to investigate the cases presented to them, has as yet, given us but little light upon the definite causes of the conditions in which we find the Special Child. The old war between heredity and environment is still on and the questions as to whether this condition is caused by nature or poor nurture have not yet been satisfactorily settled. As is the case in most instances, however, it is quite probable that the truth lies between hered-

ity and environment, both play an important part. The causes which we already accept as important belong to both classes. As a matter of fact, anything which has a tendency to weaken the stock or the nervous force of the individual has a downward tendency and will if persisted in lead eventually to degeneracy.

It has been found convenient to divide the causes into three classes:

(a) Those acting before birth.
(b) Those acting at birth.
(c) Those acting after birth.

In looking for the causes acting before birth, we need to get as much as possible of the family history of the case. This is often almost impossible but it is well to make note of every point obtainable. Altho in many cases of degeneracy we find a poor family history, in a few, altho the family tree has been carefully examined, we find nothing that should produce degeneracy any more than we find in their families those things which we believe should produce a Shakespeare or a Patrick Henry.

One of the most prolific sources of mental dullness or deficiency is found to be parentage in the great Neuropathic family. Here we find many classes of people, who nearly always transmit some form of nervous disease, or condition to their children. We find among them the idiot, imbecile and feeble-minded; the insane, epileptic, and paralytic; some of the consumptives, blind and deaf; some kleptomaniacs and recidivists or habitual criminals, sexual perverts and prostitutes, tramps and paupers, chronic inebriates and petty criminals. The children of these classes do not necessarily have the defects of their parents, but may show the evil influence of their parentage by developing some other of the forms mentioned above, and in a large number of cases we find a greater tendency toward backwardness, subnormality and feeblemindedness. It is a great circle in which we find cause degeneracy, result degeneracy.

Tuberculosis, syphilis or intemperance on the part of the parents is quite likely to affect the child and if the parents or grandparents are blood relations there is a double heredity with a tendency to intensify the blemish. At times special physical or mental disturbances to the mother during gestation, such as shock, fright, accident, excessive worry, etc., may leave their mark upon the child. The exhaustion of the mother in bearing many children, the extreme youth or old age of the parents are all important causes, for how can we expect a well-developed child from an undeveloped or weak or exhausted parentage.

The general characteristics of the family as to ability to get along, thrift, etc., have some slight bearing on the case, indeed, as has been intimated any characteristics in the family may be transmitted, the bad with the good and the former often intensified in the transit.

Of the causes acting at birth, the most important is prolonged parturition. The prolonged pressure on the soft and delicate head or the shock of using instruments and the partial asphyxiation, all lessen the chances of the child's being normal when he begins to grow. It has been suggested that twins are not as liable to be bright as are single born children, and that the first born is liable to be duller than the others, but statistics do not bear this out. In the case of premature birth the chances are much better for weakening the mental and physical forces.

Accidents claim a small percentage of cases but are largely preventable. Most of the other causes may only be prevented when an enlightened public and especially the mothers and teachers, shall so insist upon clean, wholesome living, and the enforcement of laws regulating marriage that such conditions as mentioned above shall become impossible.

Of the causes acting after birth, those resulting from accident or sickness are the most common. A fall down stairs or from the hands of a careless nurse, or from the high chair or buggy may easily cause permanent injury to the sensitive brain. A severe fright or shock has been known to cause defectiveness and we have record of many cases in which the after result of some one of the febrile illnesses of childhood has been dullness or imbecility or affections of sight and hearing. These developing brain cells which are so easily affected before the age of eight are particularly susceptible to the weakening effects of sickness, and infantile convulsions, epilepsy, cerebral affections, and sun stroke are grave causes of concern, severe shock, if not permanent injury often resulting. Children should have little or no brain work until after seven years of age. The large mortality in children in school between the ages of six and eight is not entirely due to the fact that there are many together and so they are more exposed to contagious and infectous diseases, altho that in itself is important but it is largely due to their not being as well developed physically as those who do not go to school.

A number of statistics reported to the Pennsylvania State Teachers' Association in April, 1904, showed that the children who attended school at the age of six grew two centimeters less and increased in weight one pound less than those of the same age who were not attending school. If it happens that the environment or home conditions are such that the child must be somewhere then the kindergarten or the primary school must take him, but it should be practically entirely a play time and a place where the child shall be permitted to develop with as much individuality as possible and in every instance the usual routine of school work should be kept out. To construct a good physical basis upon which to build in future years, should be the task of the teacher of children under eight years old.

We find a few cases of backwardness or feeble mindedness by deprivation, i. e., the loss of two or more of the special senses. Where sight and hearing are both absent, the problem is a serious one and only the most careful, wise and painstaking training will prevent the child from sinking into idiocy. Without such training Helen Keller and Laura Bridgman and many children now in training in the schools for the blind would have gone steadily down.

Starvation, and by that I do not mean lack of food, but rather improper food and poor environment, particularly the constant living and sleeping in unsanitary surroundings, where even the air is unfit for adults to breathe, are responsible for many cases of dullness and backwardness. When a child suffering from some disease which would otherwise be mild, is in unwholesome surroundings, the brain is one of the first organs to suffer.

The problem is a serious one to parents and teachers, for too often the parents are both poor and ignorant and it is impossible to leave the crowded, stuffy and unhealthy room which is home for six or more people, even when the baby begins to develop tuberculosis before it leaves the mother's breast. The medical inspector too often misses this side of the problem and the visiting nurse is hardly known as yet, so it falls to the teacher to write and talk of those things until the powers that be begin to recognize the fact that they must prevent, not merely try to cure after the damage is done. In the crowded districts in the large cities, this is decidedly the teacher's problem and her business.

It is not enough that the public school shall care for the children from nine to twelve and from two to

four. The home is not a fit place for the little child and particularly for the Special Child and the street certainly is not, so every effort must be made to have the school care for them. Literally thousands of children in cities like New York, Philadelphia, Washington, Chicago, St. Louis, and San Francisco need other than their parents' care during all of their waking hours. I do not believe in the State or the municipality relieving the parents of their proper responsibility as a general thing but when the parents are manifestly irresponsible and unable, it behooves us for the sake of our civilization and for the sake of our own children growing up to take the matter in hand and check this great evil which is daily adding to the number of children requiring special care in the public schools and in the institutions for defectives, dependents and delinquents.

The medical inspector, may his tribe increase with great rapidity, is doing excellent work in the discovery cure and (alas, that I must put it last), prevention of eye, ear, nose and throat troubles. Practically all of the knowledge acquired by a child comes to it thru its special senses and if any of these are inactive the child is handicapped in its struggle for normality. Expression is one of the greatest incentives to mental action and if any avenue of expression is blocked in any way, there is sure to be trouble. The brain impressions, which are made indirectly by faulty sense organs, adenoids, tongue tie, etc., are out of all proportion to their apparent importance. The brain as I have said is very sensitive in the young child and suffers easily.

These causes above mentioned are hard to prove by statistics. Our child study during the past twenty years has been very empirical; has covered a great deal of surface and has given us only general results but surely common sense tells us that here are many preventable troubles that are receiving too little notice. And now I wish to call attention to one more thing, which is undoubtedly a vital cause of defectiveness in children, but which, because it is insidious and because it seldom shows its effects in one generation is at least as dangerous, if not more so than any above mentioned, and that is over pressure in the schools. Forty or fifty years ago conditions were vastly different from to-day. Then children were not massed together two or three thousand (and more) in a single school building. Education was more fitted to the child, instead of the child being fitted to the system. The three R's were enough in the schools and the child usually learned much more that fitted him for life, outside of the school room, than he does now. But as urban life encompassed a larger and larger proportion of the children it was found that they were not getting enough to make well rounded men and women and so physical culture, drawing, music, nature study, manual training, etc., were added to the curricula until to-day the average school curriculum is terrible. Instead of dropping out a great deal that was in the old courses of study, practically all has been retained and all of these things added. Turn to any arithmetic and go over the problems from page to page and it will shock you to see the number of foolish problems contained therein and the number of non essestial things the children must learn. Most of the other text books are the same, containing things that are never encountered outside of the school room and which are promptly forgotten forever once the examination is passed, unless perchance the child is unfortunate enough to teach school at some future time and is required to teach the self same things. Now the little child can only take about so much and therefore the crowding has been done a little later so that to-day the work done by boys and girls at the adolescent period of

life is a shame to our age and times. Examine the course of study you parents, and do you teachers look at it from the point of view of the ordinary citizen and of the child, and especially you who teach the Special Children in the public schools and to whom the great public will soon look for suggestions and advice as to the prevention of the conditions which make your work necessary, I wish you to look at the courses of study for the girls who are to be the mothers and the boys who are to be the fathers of the next generation. The period of adolescence is a critical period for the child. It should be a period of rest but instead more and more is being added from year to year and little or nothing taken away. The courses are made out by scholastics, college bred men and women who feel that every thing must lead to a college education. I believe in a college education and wish that every child might have one, but they do not. Less than five per cent. of the children who enter the primary classes ever pass thru the high schools and as only a small percentage die the others leave school early and instead of their schooling being such that at any period they are best fitted for the lives they will probably lead upon leaving school they are only partially fitted for a life which they cannot lead. The teachers are not altogether to blame for the great pressure at adolescence. Parents are ambitious for their children. They wish them to learn all that they did and then more. They want them to be sure to "pass" and tell the teachers so and still they complain of the lessons the child has to do. And the child himself is so stimulated by the fear of being left behind its companions that it unconsciously helps toward its own destruction.

In the desire of the Superintendent to have the best school system and the supervisors to have the best districts and the principals to have the best schools and the teachers to have the best rooms there has grown up a great race in which the child is spurred on and on until physical endurance can stand it but little longer. But the child recovers easily. Yes, but how much does it recover. As we go into the seventh, eighth, ninth, and tenth years of school, we find more and more nervousness on the part of the children. We find, too, an increasing proportion of girls and a demand for more of the arts,—the emotional things—and less of the serious. Our courses of study have at least changed in that particular. But emotional things are nervous things and so we are weakening our children more and more, and, these mothers of the children to come are less and less able to bear strong-bodied and strong-minded children, children able to meet the nervous, rushing spirit of our time and conquer it. We think of the families with a history of insanity, imbecility, epilepsy and other neuroses. We talk of the evils of drink, crime, tuberculosis and poor environment. We try to guard against the causes which act at and after birth but we go right on not only neglecting to stop but actually adding to this great cause the weakening of the stock by mistreating our children right in the public schools and so making them more likely to contribute to all of those terrible causes acting before birth. We must cut out the non-essentials and make our lessons real live things that appeal to the child thru its every day doings. The connection must be evident at every turn. We must not teach anything in theory merely for the sake of the actual training it will give, for on every hand are practical and useful things in abundance, which will give all of the training necessary to fit our boys and girls to live their lives fully and wholesomely and then we shall remove the greatest cause and take a long step toward the great aim of all charity and special class work, i. e.,

to make itself unnecessary.

EXPRESSION AND ITS PLACE IN THE SCHOOL.

ALICE F. MORRISON

"Knowledge and being are correlative"—and yet knowledge to be of real value to us, must have expression in our own way and in our own words. It is only then, after we have sensed a thing and given it out again, as our own, that knowledge intuitive or gained becomes comprehensive.

For instance, we know certain phenomena concerning the planets and yet it is only after we have actually viewed them ourselves, through the telescope, have made calculations and worked out problems that we really understand planetary astronomy. This is also true of the more simple things in life. The perfume of the rose seems more sweet and the colorings more exquisite after we have shown it to a friend, have given audible expression to our esthetic sensations. Now the Botanical and Astronomical facts, tho existent, were not a part of us until we had sensed and given expression to our investigations and sensations.

This expression can be, is, manifested in various ways, in written and in spoken language, by means of motions, signs, constructed examples, etc. However the "how", is not the important point which I wish to make just now, but rather that, upon our expression, be it of what ever character it may, depends the completeness of our knowledge of any and all subjects.

Think for a moment of Beethoven, Shakespeare, Longfellow, Helen Keller and many others, and of what value their knowledge would have been, had they lived and died without ever having given expression to their inspirations.

Now all of this which applies to normal adult minds, applies with double force and meaning to the development and comprehensive understanding of abnormal child minds. Children and especially defective children need to express in their own language or way, their view point of things. For them to comprehend and enjoy the perfect descriptive language of matured minds or to revel in the grandeur and beauty of some noted painting, is expecting of them impossibilities.

For example the customary way of teaching the first steps of reading, is to place before the child a story, complete, about something which has no interest for him, something which he has seldom if ever seen and which we fail to picture for him in understandble form. i. e., A. B. C. D. "The rat sat on the mat", etc. Now we not only expect the child to be interested in this unknown some thing, for few children have ever seen a rat, but to be perfectly happy groping about in absolutely meaningless hieroglyphics, for when you consider the mind pictures made by the spoken or written words, mat, sat, on, the; you must decide that they are very uninteresting pictures. I hardly think that the average school child, if left to himself, would ever choose such pictures with which to adorn the walls of his mind or even the blackboard.

Of course children do learn to read, and of things, in exactly this way, learn that A is A, and that B is B, and that the first line in the Primer reads, "The rat sat on the mat", but it seems to me that in teach-reading in this way we take away from the child all individuality of thought or expression, on the subject, providing he happens to know a very little about rats. We use him simply as a little machine with which to grind out in exactness, what men have elected to be put in print, marking him in the meantime on our little card according to whether he recognizes the printed words or not, and all this because we are the teachers and can make children do and

say things and words, our way.

And it does not seem to me that this is the best way to bring out and develop little minds. It would seem, rather that their concept and expression should be of first consideration.

At this point you will say, but how can a child learn to read thru expression, when he has no knowledge of letters or words and little or no vocabulary. Did you ever watch a little fellow build a house? Does he first go and get together materials, bricks, boards, mortar, etc., then dig a cellar, build a foundation. No, he builds his house of the ONE brick, which is at hand and has suggested, HOUSE, to him and to him the one brick means "a house". Later he finds another brick and he runs and sticks it on beside the first brick and now he has an ell and it means just that to him. At this point a chimney for the house is suggested to his mind, by perhaps seeing smoke arising from some distant chimney and so he rushes away to find something with which to build his chimney and so the little fellow works, one thing suggesting and leading to another, until he builds up a whole village and populates it with all kinds of so-called, living things.

Now all of this, the natural workings of a child's mind, applies to the question of reading in exactly the same way. A child does not want to be logical, he wants to be natural, as he learns to read. He wants to build his own little Primer, as he has his house, he wants to build it word by word, wants to go and bring these words and when he has brought them, they always mean to him, just what he says they are. And now is the time when teacher can direct and aid the building of their little "house primer", by showing the children how she would draw a few word pictures which are to go in their books. They are delighted to have the teacher help them, (providing she is the right kind), and after awhile the children, unconsciously imitate the writing of these words, until before the teacher is aware of it, scrawls are giving place to little readable stories, and, yes, the children are learning to read.

At this point another important feature enters which should be given due consideration. We can not expect children to talk of, and have intelligent expression about, things they have never seen, and really expect them to understand what they are talking about.

We think they do—must—after our elaborate descriptions, but in nine cases out of every ten we are mistaken.

An instance of actual occurrence told by one of the New York teachers, illustrates this perfectly. The teacher had been telling the children about a lion, how its tail is round and has a sort of a bush at the end and how when the lion is angry it lashes its tail back and forth, etc., etc., and after a moment a little boy raised his hand and said, "Yes, my mother has one out in our back yard, that she always hangs the clothes on to dry."

Strange isn't it, how children do confound things—and yet is it? To a child who had never seen a lion and had seen a line, was it not the most natural thing in the world, that to the child's mind the teacher's description fitted the known thing perfectly ?

My experience with children has taught me to believe, that it is impossible for a child to really know and understand what is taught him about things general or specific unless he can see the things with his own eyes or feel them with his hands and can talk about them in his own way, in his own child language.

We all know the story of the "Jabberwok". Many of the lessons taught in school, are just as meaningless to the child, as is this story to us.

Not long ago, while visiting one of the Defective Classes in ————. I

was much interested and not a little surprised to find the teacher giving a lesson on the Eskimo. She was telling the class about where these people live, thousands and thousands of miles away (the children had Alaska as one word of their spelling lesson). She was also describing to the children how the Eskimos dress, what they eat, how occupy themselves, etc. Now think for a moment, even tho the teacher put her very heart into the lesson, how much more interesting, with the same amount of energy, she could have made one little story about her own boys, this very class, snowballing, illustrated in actual life, than this of the Eskimo, a lesson that could never be illustrated, other than by artificial means, never by the people themselves. Yes, and not only more interesting but think how much greater would have been those children's opportunities of expression.

Not one of the defective children in the class could tell one thing about the Eskimo except as he echoed what the teacher had already told him. On the other hand, think of the possibilities of original expression, suggested by a good, lively, snow-balling match.

With all the known material at hand, I wonder why we search for things that are meaningless to the minds of little children? Why make learning so hard and tedious when it really is not? Why give lessons about things of which they can have no means of expression, except to echo our own words and which, after they do echo the real meaning of, they rarely, if ever understand. Why?

What ever the answer be, let us strive with renewed vigor and purpose henceforth, to select such materials for our children to study, think, write and give opinions about, as will permit of their first hand acquaintance, personal investigation, and original expression, always.

A SIDE LIGHT ON THE DEVELOPMENT OF THE NUMBER CONCEPT.

HENRY H. GODDARD

As a means of testing what she calls the semi-logical memory, Dr. Norsworthy uses four dictations, viz.:

No. 1. I have one head, two eyes, two hands and ten fingers.

No. 2. I sit in my seat, I read from a book, I write with a pencil.

No. 3. One and two are three, three and four are seven. Five and six are more than ten.

No. 4. In the morning I go to school. After school I play. At night I go to bed.

In use, No. 1 is repeated to the child and he is asked to repeat as much of it as he can remember. The child's answer is written down. Then No. 2 is given, and so on.

In plotting the curve for the results of this test with our children, the universal drop in the curve at No. 3 attracted our attention and led to the inquiry, "Why do they always remember this one less well than the others?" The obvious answer is, that it is less logically put together. But a careful study of it does not show this to be the case. We have in it all the digits enumerated except 8 and 9 and nearly in their natural order. Compare this with the others. In No. 1, head, eyes, and fingers are named: ears, nose, mouth, teeth and chin are not mentioned. Any one of these is as logically connected with any one of those used as any that are used. In No. 2, the three occupations are neither the most prominent incidents in school life nor more logically connected with each other than perhaps a dozen other things that might be mentioned.

In No. 4, we have possibly three logical divisions of the day, but surely not the only ones even to a child. Our children go to school in the afternoon also. After school they work or eat dinner or supper. In the eve-

ning they sing, etc. They "go to sleep" as much as they "go to bed."

Again, much would depend on the way in which the answers were marked. Here is Dr. Norsworthys' plan for marking, the one that we followed. [Each parenthesis receives two points.]

1. (I have) (one head) (two eyes) (two hands) (and ten fingers.)—10.

2. (I sit) (in my seat) (I read) (from a book) (I write) (with a pencil)—12.

3. (1) and (2) are (3). (3) and (4) are (7). (5) and (6) are more than (10)—18.

4. (In the morning) (I go) (to school). (After school) (I play). (At night) (I go) (to bed)—16.

Change of order equals one half.

2.

In my chair in the seat on my seat	-1
from the book out of a book with the pencil	-1

3. 5 and 5 are 10.—4.

4. In the afternoon—1; in the evening—1; when school is out—1.

A brief comparison here will convince the reader that there are at least as many possibilities of error in 1, 2 and 4 as in 3. In other words, the dice are not loaded to make 3 surely a loser. The change of a preposition in 2 and 4 counts off—and such a change is very natural to make. In 3, about the only possible errors are change of order, repetition and omission.

On the surface then, there is no inherent difficulty in No. 3.

We presume Dr. Norsworthy devised the four tests so that they would be very nearly equal from the standpoint of what may be termed the mechanics of memory. And it would seem that she has succeeded to a high degree.

If now, we look deeper, we notice of course, that 1, 2 and 4 are concrete while 3 is abstract. But it must be regarded as one of the simplest abstractions and one that has been so often repeated—learned—that it has almost ceased to be an abstraction. Indeed I have found people who insisted that for practical purposes of child education the numbers 2, 3, 7, 8, etc., were not abstractions.

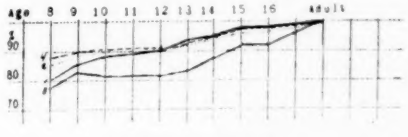
In the face of this difficulty it will be well to get our data before us and examine it closely.

Dr. Norsworthy's records of normal people on this test are based on 386 cases ranging from ages 8 to 16.5 and "adults." The percentage of points scored on each dictation is as follows:

Age	Dict. No. 1	Dict. No. 2	Dict. No. 3	Dict. No. 4
8	80	85	77	87
9	86	88	83	89.4
10	88	90	81	90
11	89	90	81	90
12	90	90	81	90
13	93	92	83	92.5
14	95	94	87	95
15	97	96	92	97
16	97	96	92	97
Adults	100	100	100	100

These percentages are based on the Median.

From this table it is seen that at every age (save adults) No. 3 is from 4 to 10 per cent. below the others. It begins to approach at age 14, but only in adult does it equal them. The following curve shows this graphically:



Record of normal children on each of the four dictations. (Distributed according to age.)

Turning to Dr. Norsworthy's feeble minded children, an average of her cases, 76 in all, who took this test, gives the following percentages: 65, 62, *43, 70, for Nos. 1, 2, 3, and 4.

was much interested and not a little surprised to find the teacher giving a lesson on the Eskimo. She was telling the class about where these people live, thousands and thousands of miles away (the children had Alaska as one word of their spelling lesson). She was also describing to the children how the Eskimos dress, what they eat, how occupy themselves, etc. Now think for a moment, even tho the teacher put her very heart into the lesson, how much more interesting, with the same amount of energy, she could have made one little story about her own boys, this very class, snowballing, illustrated in actual life, than this of the Eskimo, a lesson that could never be illustrated, other than by artificial means, never by the people themselves. Yes, and not only more interesting but think how much greater would have been those children's opportunities of expression.

Not one of the defective children in the class could tell one thing about the Eskimo except as he echoed what the teacher had already told him. On the other hand, think of the possibilities of original expression, suggested by a good, lively, snow-balling match.

With all the known material at hand, I wonder why we search for things that are meaningless to the minds of little children? Why make learning so hard and tedious when it really is not? Why give lessons about things of which they can have no means of expression, except to echo our own words and which, after they do echo the real meaning of, they rarely, if ever understand. Why?

What ever the answer be, let us strive with renewed vigor and purpose henceforth, to select such materials for our children to study, think, write and give opinions about, as will permit of their first hand acquaintance, personal investigation, and original expression, always.

A SIDE LIGHT ON THE DEVELOPMENT OF THE NUMBER CONCEPT.

HENRY H. GODDARD

As a means of testing what she calls the semi-logical memory, Dr. Norsworthy uses four dictations, viz.:

No. 1. I have one head, two eyes, two hands and ten fingers.

No. 2. I sit in my seat, I read from a book, I write with a pencil.

No. 3. One and two are three, three and four are seven. Five and six are more than ten.

No. 4. In the morning I go to school. After school I play. At night I go to bed.

In use, No. 1 is repeated to the child and he is asked to repeat as much of it as he can remember. The child's answer is written down. Then No. 2 is given, and so on.

In plotting the curve for the results of this test with our children, the universal drop in the curve at No. 3 attracted our attention and led to the inquiry, "Why do they always remember this one less well than the others?" The obvious answer is, that it is less logically put together. But a careful study of it does not show this to be the case. We have in it all the digits enumerated except 8 and 9 and nearly in their natural order. Compare this with the others. In No. 1, head, eyes, and fingers are named: ears, nose, mouth, teeth and chin are not mentioned. Any one of these is as logically connected with any one of those used as any that are used. In No. 2, the three occupations are neither the most prominent incidents in school life nor more logically connected with each other than perhaps a dozen other things that might be mentioned.

In No. 4, we have possibly three logical divisions of the day, but surely not the only ones even to a child. Our children go to school in the afternoon also. After school they work or eat dinner or supper. In the eve-

ning they sing, etc. They "go to sleep" as much as they "go to bed."

Again, much would depend on the way in which the answers were marked. Here is Dr. Norsworthys' plan for marking, the one that we followed. [Each parenthesis receives two points.]

1. (I have) (one head) (two eyes) (two hands) (and ten fingers.)—10.

2. (I sit) (in my seat) (I read) (from a book) (I write) (with a pencil)—12.

3. (1) and (2) are (3). (3) and (4) are (7). (5) and (6) are more than (10)—18.

4. (In the morning) (I go) (to school). (After school) (I play). (At night) (I go) (to bed)—16.

Change of order equals one half.

2.

In my chair in the seat on my seat	-1
from the book out of a book with the pencil	-1

3. 5 and 5 are 10.—4.

4. In the afternoon—1; in the evening—1; when school is out—1.

A brief comparison here will convince the reader that there are at least as many possibilities of error in 1, 2 and 4 as in 3. In other words, the dice are not loaded to make 3 surely a loser. The change of a preposition in 2 and 4 counts off—and such a change is very natural to make. In 3, about the only possible errors are change of order, repetition and omission.

On the surface then, there is no inherent difficulty in No. 3.

We presume Dr. Norsworthy devised the four tests so that they would be very nearly equal from the standpoint of what may be termed the mechanics of memory. And it would seem that she has succeeded to a high degree.

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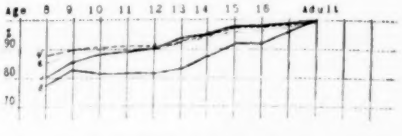
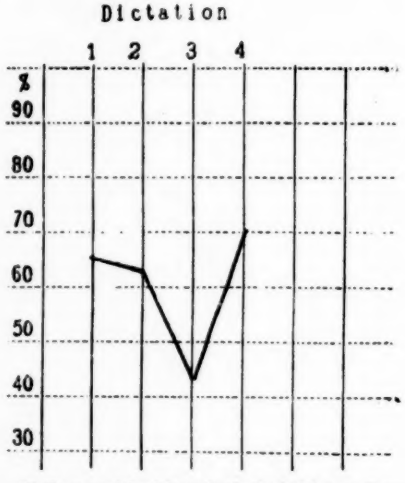


Record of normal children on each of the four dictations. (Distributed according to age.)

Turning to Dr. Norsworthy's feeble minded children, an average of her cases, 76 in all, who took this test, gives the following percentages: 65, 62, *43, 70, for Nos. 1, 2, 3, and 4.

respectively. Here No. 3 is from 20 to 27 per cent. (nearly) below the others. See attached curve.



76 Cases of feeble minded children. Percentage made on each of the four dictations.

Of these cases we know nothing save that they were, as were all of her cases, the highest grade, the select few who were able to do school work in the institutions where her study was made.

We may now examine in detail a few of our own cases.

1. F.* 19* Has been studying and working with numbers, here, twelve years. Can add, subtract, multiply and divide. Is relatively a very bright girl. Her record on these dictations is: 100, 100, *50, 90 for Nos. 1, 2, 3, and 4 respectively.

2. F. 11. Has had number work for two years. Can add and subtract; can multiply a little. Relatively bright for her age. Her record is 80, 100 *65, 100.

3. M. 15. Has had numbers for four years. Can add and subtract. His record is: 100, 80, *60, 100.

4. M. 16. Was two years in public school; has had number work four years here. Can add and subtract and multiply by one figure. Record, 90, 100, *65, 100.

F* 19* means Female, 19 years old.

5. F. 13. Has had numbers here six years. Can add and subtract. Her record is: 80, 90, *55, 97.

6. M. 13. Has had numbers here eight years. Can do the fundamental operations. Record: ( ), 93, *30, 100.

7. M. 14. Has been four years in public school and has had number work a little more than a year here. His record is: 40, 100, *32, 64.

8. F. 17. Has had number work here seven years. Can add and subtract—the latter not always accurate. Her record on this test is: 60, 74, *68, 99.

9. M. 14. Has had number work six years. Can add and can subtract simple numbers. Record: 60, 100, *0 67.

10. F. 16. Has had number work here five years. Can add and can subtract a little. Record: 50, 74, *15, 55.

11. F. 16. Has had number work here four years. Can add simple numbers. Record: 100, 80, *55, 81.

12. F. 14. Has had number work three years. Can add. Record: 60, 50, *33, 55.

13. M. 10. Has had number work three years. Can add a little. Record: 80, 100, *33, 100.

14. F. 14. Has been here six years. Can add simple sums. Record: 60, 0, 0, 0.

15. M. 8. Has been here one year. Cannot add. Record: 20, 30, *0, 37.

These fifteen cases have been taken at random from the whole group to whom this test was given. After counting out the fifteen I arranged them approximately in order from the brightest to the dullest.

The extent of the falling off of Dictation No. 3 in every one of these fifteen cases is very remarkable and taken in connection with the percentages already quoted they challenge investigation. There can be no escape from the conclusion that we are dealing with some law, however little

we may know of its nature.

We have already seen that No. 3 differs from the others in that words stand for abstractions instead of for concrete things or experiences. Evidently the abstract notion of number, the number concept, is difficult to grasp. So much is clear from our first table. Not until we come to normal adults do we find "No. 3" as readily grasped as the rest. But when we come to consider our feeble minded children we discover still more. Not only is this number concept more difficult to grasp and the words that involve it more difficult to remember but we reach a point among these children where the concept seems well nigh non-existent. Consider the 9th child in the list: after six years of training he has developed enough comprehension so that he remembers 100 percent of dictation No. 2, but when he comes to numbers he cannot remember that we said "1 and 2 are 3." The whole thing is mere jargon to him and literally paralyzes his memory. All this in face of the fact that his teacher says he can add and subtract. In Case 1 we have a girl who has attained to a high degree of training. If the reader should see her for an hour he would wonder why she is in the institution. She gets 100 per cent. twice and 90 per cent. on the other dictations. She does the fundamental operations very well, but her grasp of the number concept is so slight that she holds on to only 50 per cent. of "No. 3."

All the other cases tell the same story with varying degrees of emphasis. May this not mean that the number concept is not formed at all in these children and that what they seem to get, either in addition or in this memory test, is merely parrot work? So far as our children are concerned this explanation fits perfectly. We have many children who can tell you that we have ten horses and three are hauling coal and therefore seven are left in the stable. But these very children cannot tell you how many 1 and 3 are.

If these children are lacking the number concept what shall we say of the normal children who seem to be always from 4 to 10 per cent. behind on dictation No. 3? Surely the number concept develops before sixteen! Would the following consideration account for our curve?

It is safe to assume that there are great individual differences. But suppose the number concept develops generally between the ages 8 and 12. Those in whom it develops from 10 to 12 have been working at "number" in school for 2 to 4 years before they have any capacity for it. They are always floundering beyond their depth consequently number in any form becomes hateful to them. Their memory for such combinations of figures would be very low and even tho there were many whose memory was good yet the median would be brought down. In other words a constant disturbing element present in No. 3 will bring that curve down lower than the other curves where such disturbance does not occur. e. g. Suppose one is examining students from many preparatory schools, in Mathematics, Science, History and Language. If there were in the group a few schools having pupils of all grades, that did not teach history, then in plotting the averages the history line would run lower than the others altho the schools that did teach history taught it just as well as they taught Mathematics, Science or Language. There is a disturbing influence in the History not present in the others.

The disturbing influence in our case seems to be the slowly developing number concept.

If we have hit upon a right explanation of our data we have a most important conclusion. Most of our feeble minded children have been arrested in their development before the concept of number had come to them. It is a waste of time and energy to

attempt to train them in abstract number. Simple combinations of concrete things is all that they can master.

In the Public Schools the number concept does not develop for many children until some time, perhaps years, after they usually begin number work. This time is wasted: and worse than that, the child is confused and discouraged and effectually driven away from ever having that love for number which leads to its mastery.

Thus the data from the feeble minded children has given us a starting point which may enable us to interpret the facts of normal life and possibly discover a principle of great importance to the Public School teacher.

If anyone is disturbed by the thought that perhaps it is not safe to argue from feeble minded children to normal children because they are radically different; it is sufficient to remind such an one that no one, who has studied them at all, any longer regards them as radically different. They form a continuum and what is true of one is true of the other, but in a different degree.

In order to leave our conclusion where we believe it belongs, it remains to consider one more point in connection with the practical application of the principle we have deduced.

There are certain educators who honestly believe, and others who find themselves in a system which they think justifies them in acting as though they believed, that it is wise to crowd a child with facts and ideas at a time when he can remember them and regardless of whether he can understand them or not. The justification of the procedure being found in the assertion that he has nothing else to do now and some time these things will be valuable to him.

We will not take the time here to prove that both those assertions are false. Nor will we elaborate the declaration that such a procedure assumes that ideas and mental processes are like gold dollars that can be hoarded away under ground somewhere for years and dragged out by main strength when wanted. It is needless even to say that such a view is based on a psychology as old and worn out as it is false.

We only wish to present one set of facts gathered from the feeble-minded.

"Once upon a time" similar ideas were held by the teachers of the mental defectives. Twelve of our most trainable boys were taken at the most trainable age and drilled on number. They were trained until they could cover a blackboard with figures and drawing a line underneath, add up the total mass. Day after day and week after week they did this and gloried in their accomplishment. I need not tell you that they did not understand what they were doing—that is not the point. The question is, "Did they get something that was useful to them afterwards?" THOSE BOYS CANNOT TO-DAY TELL YOU HOW MANY TWO AND THREE ARE. Some of them can tell you that two cows and three cows are five cows, but they can do no more. They got nothing that has ever done them any good.

The advantage of this experience with feeble minded boys is this. It is not complicated by many factors. Normal boys would have learned number later somehow—perhaps indeed have become famous mathematicians. Then the teacher would have been sure that it was his method that deserved the credit and no one would be able to disprove it. With these children we have almost ideal experimental conditions. Their minds are so simple and sluggish that they do not progress unless helped. If the means that we use to help them does not help we know that the means was inadequate. If it succeeds we know just how much credit to give it.

In this case this method was given a fair trial and failed absolutely There seems to be no escape from the conclusion that such procedure is a mistake.

The matter would seem to stand thus: Feeble minded children seem to have little concept of number. The concept develops late in normal children. Judging from the number of children who dislike mathematics it would seem that a goodly proportion of children were spoiled for mathematics by beginning number work before the concept was capable of being developed. The late Prof. David M. Sensenig, a mathematical teacher of great experience, averred for years that the greatest difficulty that he had to contend with was those pupils who began arithmetic too soon. He declared that it was almost a universal fault. If this be true it behooves our schoolmen to rectify a glaring fault in the system.

Not one test alone but many will bring conviction in a problem of such vital importance. In this case the data seems sufficient to at least open up the question. If in addition there is a fair presumption that the interpretation is correct it may serve to point the direction in which the solution will be found.

AGRICULTURAL INVESTIGATION.

GEORGE A. MITCHELL

In the Spring of 1905 at a meeting of Pomona Grange, No. 4, in Bridgeton, the agricultural experiment work that had been in progress at the Training School was explained and the advantage of cooperative experimenting by the farmers of the County was discussed. It was decided to ask each subordinate Grange in the County to appoint two delegates to be members of an Experiment Committee. This committee was to meet at the Training School to inspect the experiments there in progress and make suggestions concerning them and outline new experiments. The first committee meeting was held in August of 1905 and meetings have been held semi-annually since that time.

At the Training School farm several experiments are in progress. Most of these are planned to extend over three or more years. The object of this is to show up any irregularities in the soil, also to avoid depending on the results secured in any one year. In a dry season the result of a fertilizer test might be different from the result in a wet season. A very cold Spring like the Spring 1907 might cause various misleading conclusions if an experiment were tried this one year only and the results depended on in planning future work. For instance, the fertilizer experiment this year with sweet corn will form an instructive part of a three year experiment, but would be very misleading if the results of 1907 were taken alone.

Again, when any one has tried an experiment that shows results contradicting some pet theory of long established local belief many farmers will rightly say that "in the long run" this is particularly true of fertilizer and manure tests. The value of barnyard manure in growing most crops is self evident and the lasting effect on both the fertility and tilth of the soil is so readily observed that the average farmer assigns a large value to the future returns from an application of manure. Therefore, in all fertilizer experiments the comparison of crops from the different plots should be kept up a sufficiently long time to make sure that all the difference in value of the different manures and fertilizers has been shown in crops secured. For instance, in the sweet corn experiment referred to, there are four plots where four different methods of fertilizing have been practiced, each plot treated the same two years in succession. The whole

area has now been sowed to crimson clover and each year it is proposed to treat all plots alike and thus observe any residual effect there may be from these two years of different treatment of the four plots.

This same principle is applied in the prosecution of the field corn and the sweet potato fertilizer experiments. These experiments at the Training School are only a part of the work of the experiment committee, but they are naturally the first part. What has been done has been largely copied from the work of the regular State Experiment Stations. And this method will undoubtedly be our best method for the future, namely:

1. Learn what the Experiment Stations and progressive farmers are doing.

2. Select what may be of value to our section of New Jersey and perform those experiments at the Training School which are likely to give results valuable to the farmers of Cumberland County.

3. The farmers should then repeat those experiments which have given favorable results at the Training School.

In this way we will be able to select from the mass of published agricultural matter that which is of value to the farmers of this locality.

A great many methods that have been tested and found of value in other parts of the United States will not be found valuable in farming our sandy soil. While on the other hand many farm problems can be settled as well at New Brunswick or Washington as our own farms. For example the San Jose scale can be fought the same way in Southern New Jersey and in New York and Pennsylvania. But tests of the most profitable kind and amount of fertilizer and manure, the best varieties of vegetables and many other matters can best be settled by ourselves. Let us then formulate just what our experiment committee can and should do. In the first place, all branches of agriculture should be represented to the Committee and all be willing to give their attention to any subject, relating to the improvement of our local agricultural interests. Then, when an experiment has been completed at the Training School and a favorable result secured the experiment should be repeated by several farmers and the results brought before the committee for comparison. An illustration of this would be the use of 150 lbs. of nitrate of soda on white potatoes (see "The Training School" for August and September, 1906). Another illustration would be the growing of alfalfa and different methods of fertilizing it.

Still another line of work that has been taken up is the discussion of the difficulties encountered by the farmers of Cumberland County and the possible solution of these difficulties by cooperative experimenting. By discussing agricultural questions as is done in the subordinate Granges the members can arrive at a better understanding of their own obstacles than any one else. Our committee should charge itself with planning experiments to show how to overcome these difficulties. By keeping in touch with Experiment Station workers and carefully reading Experiment Station bulletins and reports on those subjects in which we are especially interested, we will imbibe many ideas for improving our farm practice and here especially comes the need of testing by experiment most new ideas before applying them on a large scale. It is evident that to carry on the work here outlined a Superintendent could well spend nearly his whole time, and judging by the value of the results secured at the Training School farm it would appear that few lines of work really pay better than careful tests of best methods. It is the last quarter of a crop that frequently con-

tains all the profit from growing it, hence the importance of ascertaining first whether a crop is produced at a gain or a loss and second how to make as sure as possible of a gain. Only careful tests will show this.

SEMI-ANNUAL MEETING OF THE PAIDOLOGICAL STAFF.

On Saturday, October 5, the twelve members of the Paidological Staff met at the Training School to observe and discuss some of the many problems in which they are interested.

Upon their arrival they repaired at once to the Research Laboratory where they were shown data and diagrams illustrative of the children's condition and progress since their last meeting.

One of the first questions to claim their attention was that of nourishment. It is well known that our children have, as a rule, good appetites but their digestion is apt to be weak and in many cases their power of assimilation is doubtless still lower. The question was raised as to whether it was not possible to overcome these difficulties by some method of special feeding. It was agreed that it was well worth trying and three plans were fixed upon to be put into operation at once.

The correlation of physical measurements and mental tests elicited much discussion and was considered a line of work full of promise not only for the welfare of our children but for the children of the public schools as well.

The plan of publishing the SUPPLEMENT was laid before them and enthusiastically approved.

The moral problem and the possibility of teaching right and wrong in special cases was another important topic that was freely discussed with the weight of opinion on the side that the "moral imbecile" is a little understood topic and the child so called is much more misunderstood. Try to comprehend him and much of the difficulty will disappear.

These and other matters occupied the time and tho nearly all stayed until late evening and some until the next morning many things were left unsaid. But what was said was of great value and will bear much fruit in the future.

The Training School has no more helpful advisers or interested workers than this Staff. We may well congratulate ourselves upon such a body of actively interested men. Many institutions have Advisory Boards of various kinds, but too often their only service is to lend their names for printing in the annals of the institution. To find one that is really useful is indeed rare.

And it is no small thing for these men to give a day—and even a day and a night—to this trip. There are men of national and international reputation among the number and all are men whose lives are full of work. And they take a day twice a year to come down here and give their best thought to the interests of the Training School. WHY? For pure love of humanity. Because they recognize that some of the problems of greatest importance to the human race are to be solved in institutions like this and these children, once neglected, sometimes abhorred and now generally pitied are to be the instruments through which shall come that knowledge which shall equip the higher man that is to be. Parents and the State of New Jersey who send children here are to be congratulated that their children who need special care are where men of such large hearts and wisdom and devotion can study them.

WE NEED YOUR AID.

It is perhaps not thoroly understood that the Department of Research of our Institution must main-

tain itself without calling upon the School to furnish any funds toward its maintenance. We may use for this department the monies received as tuition from the Summer School Students but this is not sufficient to carry on the work.

We believe that our Research Work has already demonstrated its possibilities sufficiently to warrant us in asking you to contribute to this fund so that we may continue. The children of this and similar institutions will surely benefit by our findings, but of even greater importance is the benefit which will be derived by the children of the public schools, your children, your brothers and sisters.

We are not putting any copyright on our findings but are giving them freely to all who are interested. The work of the Institution is one of Charity and we wish to carry on the work of this Department in the same spirit. Will you not assist us? Many will give money to furnish amusements and entertainments for our children. Some give to furnish homes and conveniences, but for this work which is most important because it is most far reaching it is hardest to get help. Will you not pause a moment and think of what this means. Read carefully this entire paper, THE SUPPLEMENT, and you must be impressed by what may easily be accomplished if we are enabled to continue. To care for and train the present generation is a great and noble thing, but to find the way to prevent—that is glorious. Will you not share in this glory? After all it is not something we are begging of you but an opportunity we are giving to you, an opportunity to do that which shall go down thru the years to bless, comfort and help humanity, for it is helping the children.

Each generation needs the foundation laid by the former generations in order to properly erect its edifice. Shall we not labor well so that the structure shall stand? Help us then. Seize your opportunity and send us your check, be it large or small.

THE SUMMER SCHOOL.

Since 1899 we have held at the Training School regular Teachers' Meetings at stated intervals during the school year. These meetings are intended to give our own teachers a closer insight into the work of training and caring for Feeble-Minded and Backward Children. Each year new ideas were worked out and with the hearty cooperation of our teachers many problems such as frequently confront teachers of primary classes in the Public Schools, were solved at least to some extent. Special visits made to public school classes show more and more, that we, with our slow moving children, have great opportunities for finding out the why and wherefore of many perplexing questions. Recognizing this and realizing that with our opportunities comes a duty, we have set for ourselves the task of searching for solutions and making public our findings.

During the winter of 1899 a course of lectures was given our own teachers. At their meetings this Course embraced the following lectures:

1. **"Institution Life and What it Means."**
2. **"An Outline of Work with the Feeble-minded."**
3. **"History of what has been done."**
4. **"What our Institution aims to do."**
5. **"Causes of Feeble-Mindedness."**
6. **"Eye Defects and Color Blindness."**
7. **"Defective Vision."**
8. **"Nose and Throat Diseases."**
9. **"Diagnosis."**
10. **"The Physiognomy of the Feeble-Minded."**
11. **"Pathological and Educational Classifications."**
12. **"How Feeble-Mindedness may be prevented."**
13. **"Why and How these children should be cared for in Institutions and Special Classes."**
14. **"Child Study."**
15. **"The Physical Child."**
16. **"Play."**
17. **"Speech Training."**
18. **"Developing the Power to Read."**

19. **"Color as a Factor in the Training of Children."**
20. **"Nature Study and Sense Training."**
21. **"Industrial Training."**
22. **"Music."**
23. **"Morals."**
24. **"Discipline."**
25. **"The School for the Feeble-Minded as a Laboratory."**

Several School Superintendents knew of our Course. One or two heard some of the lectures and at once said, "This is what our primary teachers need." Those who had in contemplation the establishment of special classes for Backward and Incorrigible Children asked if it would not be possible for us to give such a course to their teachers at some mutually convenient time. The situation was carefully canvassed. The necessity for special classes was becoming more apparent all of the time. Wherever school boards were composed of educational men the need was felt all the stronger. Plenty of candidates for special classes were and are found in every primary school district containing five hundred or more pupils.

The regular grade teachers are still endeavoring to care for most of those children but each year has seen many special classes organized.

Now appeared a new problem. Those who undertook to teach in these classes soon found that it took more patience, tact and resourcefulness and a greater capacity for love, a keener appreciation of the value of little things and confidence and faith. Besides this they found that they needed more expert knowledge of the child they were to teach. They needed a definite knowledge of mental deficiencies, what they mean, how caused, and how best overcome; ability to test the special senses and information as to the best ways to train them. They wanted at least elementary practical knowledge of some of the lines of industrial training. More than this, to be successful, they had to find that such a child is not a discouragement and their passive sympathy for this class had to become active. But where was the teacher to find all this? Nowhere in the country was there a place in which she could study the cases, the plans and the methods. Nowhere could she get definite instruction WITH THE CHILDREN AT HAND LEADING A LIFE NORMAL TO THEM.

Then spoke the Prophet,

In the second place, we need your help in providing teachers for these special classes in our large public schools. I know of no place in the world where teachers are specially trained for such work, and yet there is no other educational work where training is so necessary and so possible. Why cannot this Vineland School become such a training school for teachers? The work must be done where there are feeble-minded children. You have them. It must be done where there are good buildings, generous grounds, an enlightened and progressive board of directors, a highly educated and experienced superintendent, a well trained and devoted force of teachers. You have all these conditions. With the addition of one expert scholar to your force it would be possible to commence in a modest way training the hundreds of teachers that we must have faster than they can be prepared. If successful, such a departure would give to this School the stimulus of many young and ardent students passing through it; it would give the School an international reputation, and it would greatly extend the beneficent work to which you are devoted.

The problem of the expert scholar was too great at first. We had no money for such a man but the need of the Summer School seemed great and we undertook to provide for that. With many doubts and misgivings we sent out a very modest announcement that our Summer School was "Intended to better fit teachers to understand the capabilities of their pupils and especially to prepare those who contemplate or are engaged in teaching backward children in the Public Schools."

Each year has seen the number of students increase and at our Fourth Session in 1907 we had fourteen graduates. We now have our expert

scholar and our friends have contributed to the fund so that with the Summer School tuitions we have nearly enough to keep our Research Department going without expense to the Institution. However, we shall need even more support if the work of this department is to become as effective as it may easily be.

The following statement, which was sent to our State Board of Education gives a good idea of the work of the Summer School.

STATEMENT RELATIVE TO THE REQUEST OF THE NEW JERSEY TRAINING SCHOOL FOR SOME RECOGNITION OF ITS SUMMER SCHOOL CERTIFICATE.

The recognition asked for is not such as shall free any teacher from the necessity of passing the regular examination for a teacher's license. Indeed candidates for admission to the Summer School are required to have a State Teachers' certificate or its equivalent.

The request relates only to that SPECIAL Examination which is very properly required of those who aspire to teach the Special Class. May not the Certificate of the New Jersey Training School Summer School be accepted by the State Board in lieu of a special examination by themselves ?

It will be readily admitted that the Special Class needs for its success a teacher who has had a first hand acquaintance with the various distinct types of mentally defective children much more than it needs one who is proficient in the subjects that can be tested by an academic examination.

A glance at the official Summer School announcement shows you that only mature, serious minded and advanced people are admitted to the Course. Those who are accepted live for six weeks in the Institution among the children and in close touch with the organization and management of a large group of backward and feeble-minded children, thus imbibing the spirit of the Institution all of the time. They spend half of every day in the school rooms teaching the children. They are in sole charge of the work and as much on their own responsibility for work and discipline as they ever are in public schools. They are constantly supervised by the experienced principal of the school department of the Institution, Miss Alice F. Morrison. Miss Morrison was for three years teacher in the public schools of New Hampshire, two years a teacher in the Institution, and has been principal for six years. By this plan these students get, under Miss Morrison, expert knowledge and perfect acquaintance with Special children and the methods of training them that have been found to be most successful after years of experience.

This part of the Course is said by experts who visit the School to be more valuable to those who teach defectives than the "Practice School" work done in many of the normal schools, because it is done under conditions where the pupil teacher is more thoroly responsible.

The students also have thirty hours of lectures, and in addition to this a laboratory course by Dr. Henry H. Goddard, Ph. D.. Dr. Goddard is an A. B. and A. M. of Haverford College, with Ph. D. from Clark University. After three years' residence and study in that institution, spent seven years in the West Chester, Pa. State Normal School as Professor of Psychology and Pedagogy. He has also spent a year in study abroad. He is now in the second year of this special work in this institution, where his entire time is devoted to solving these problems of utmost importance to teachers. Dr. Goddard's lecture course covers the most essential Psychological principles and their applications to defectives and their training. The Laboratory Course is also of the most practical character. Each student has three quarters of an hour a day thruout the six weeks. The

time is devoted to the actual testing and studying the children under the constant guidance of Dr. Goddard. Training is given in devising and using simple tests that are available in the public school class room.

The students receive each day a lecture and quiz by Superintendent Johnstone in which he gives them the results of fourteen years of experience in this work.

Lectures are also given by the Medical Consultants and by members of the Paidological Staff.

Saturdays are usually spent in visiting other Institutions.

The certificate is given only to those who show the true spirit, do the work well, and pass a written examination.

The examination which must be passed before a certificate is awarded allows 200 points for class room work, 200 points for the work in the Laboratory, 70 points each for three sets of examination questions, 60 points for a paper on how to teach some special branch to defectives, 60 points for the particular investigation carried out by the student thruout the six weeks, 20 points for note books, 20 points for the proper filling out of blanks descriptive of special children, and 20 points for the general attitude toward the work.

The Institution is so far recognized by the State that the great majority of the children are sent by the State. This fact offers a presumption in favor of a close relationship with the great public school system of the State.

Those who have received their certificates during the past four years are among the leaders and most successful teachers in the work with backward children and Special Classes—a fact which testifies strongly to the practical and efficient character of the work.

SUMMARY OF THE FOREGOING.

The certificate is worthy of this recognition, because:

1. Only carefully selected persons are admitted to the Course.
2. Long, intense and exceptionally valuable school room work is given.
3. Lectures and Laboratory work of supremely practical character.
4. Certificates are granted only to those who satisfy the high demands.
5. Holders of certificates are now teaching successfully in various special classes.
6. The Institution is so much a part of the State that the School Department may properly cooperate with it.

ALCOHOL AND ALCOHOLISM.

The "Literary Digest" for August 17th prints the following translation:

"One can not be, with impunity the son of a drunkard"—so says Dr. A. Joffroy, a French physician, who writes on "Alcohol and Alcoholism" in the "Revue Scientifique" (Paris, July 13). Dr. Joffroy's article reads in places like an old-fashioned temperance tract, but it is in reality a pitiless scientific statement of facts. Diseases, the author points out, are of two kinds, those that attack persons in normal health and those that touch only those who are predisposed to them. To create such morbid predispositions alcohol is eminently suited, and in this way it strikes down not only those who abuse it, but their descendents, often ceasing its ravages only when it has obliterated a whole family. We can quote here only a small part of what Dr. Joffroy says. First comes his division of diseases into the two categories mentioned above. We read: "In the case of some diseases (scarlet fever, smallpox, plague, etc.), the pathogenic agent produces the specific malady in every one exposed to contagion, what-

ever may have been his previous condition of health. But, on the other hand, there is a whole class of diseases that attack only such as are predisposed. Of one hundred infants fed in the same way, one or two will become abnormally fat, because, for example, the father had gout or the mother diabetes. * * * *

"But hereditary predisposition exists also with nervous diseases, and alcoholism is one of the most effective means of creating such predisposition, as well as of developing it where it exists. To have chorea or rheumatism, for instance, one must have obese, nervous, alcoholic parents. A man may be seized with shaking palsy following some violent emotion, * * * but heredity must be present to facilitate the action, and alcoholism is generally found to be at the bottom of this heredity."

In mental diseases, Dr. Joffroy goes on to say, the role of heredity is greater still. We may almost say that predispisition is absolutely necessary for these. The author rejects the classification made by some authors who divide mental diseases into those of the normal and abnormal brain. The former, he thinks, do not exist, a diseased brain being always abnormal. Even poisons that act on the brain select those who are predisposed, and this is eminently true of alcohol itself. Predispositions (generally alcoholic), determine the special form of drunkenness and explain why wine makes one man gay, another sad, another quarrelsome. Likewise, hereditary predisposition explains why alcoholism results, with one, in an ulcer of the stomach, with another in cirrhosis of the liver, with others in paralysis of one or another set of nerves. The writer continues: "On epilepsy the action of alcohol is quite clearly manifest; sometimes a subject plainly epileptic from infancy takes to drink at about twenty with the result that his attacks increase in violence at each excess; sometimes a man of thirty to forty years who has had only slight seizures in childhood begins to have the characteristic attacks, which disappear or lessen when he becomes abstinent. * * * *

In order that I may be clearly understood I will repeat the definition that I have given elsewhere of incipient degeneracy: 'The totality of organic defects, of hereditary or acquired origin, which, by lessening organic resistance, create new morbid aptitudes and make causes pathogenic when of themselves they would be powerless to injure a normal organism.'

"And I repeat again that, in the creation of these new morbid aptitudes, this hereditary predisposition, which dominates almost all pathology, alcoholism stands preeminent, doing more harm and counting more victims than tuberculosis. Alcoholism, in fact, not only affects the individual, but its effects are continued to his descendents. One can not be, with impunity, the son of an alcoholic. Alcoholism begins with the father and strikes down his children; and generally its action continues, until, in the fourth or fifth generation, it has destroyed the family. But before this final result is reached, the alcoholics and their descendants are, according to circumstances, hurled into disease, madness, or crime, filling our hospitals, asylums, and jails, as I have already said.

"Blind indeed are those who, ignorant of the dangers of alcohol, see in it only a source of revenue!"

The Training School

Entered March 14, 1904, at Vineland, N. J., as second-class matter, under act of Congress of July 16, 1894.

No. 46. DECEMBER 1907. 25c. per Annum.

WHAT THE SUMMER SCHOOL TAUGHT US.

We had fifteen students. They were earnest, intelligent young women, mostly of rather broad and varied experience. They came from different localities and with different points of view.

We have long thought that there is nothing quite so dangerous as that impregnable complacency which a recent writer says characterizes the people of a neighboring State. We try not to be complacent. If people praise our institution we are grateful but we recall our shortcomings.

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We quote these not to boast but

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well, but a food and TONIC for the sick.

That it builds up and strengthens the entire system, makes new blood, creates a wholesome appetite and assists in the assimilation of food? Not a concoction of nauseating drugs, but an ideal invalid's food in appetizing form. Try it and be convinced of its excellent virtues.

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Vineland, N. J., U. S. A.

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These fifteen students, after being with us six weeks could surely see some of our faults. Let us get them to tell us frankly just what they see amiss about the Institution—what might be done better. That they may be perfectly free to speak plainly of these grave defects which we are sure they have seen we will let them hand it in in writing, without a signature, of they prefer. They do not prefer. They sign their papers—two or three pages of foolscap.

They criticise, generally, things that we were conscious of but it does us good to have them forced on our attention again.

But here is a curious thing. Every paper has a page or more commending the "beautiful spirit" which pervades the place; "the true Christian spirit," "so much love, happiness and true home life." One says, "I am grateful for a taste of practical Christianity; I came to study an Institution and I find myself studying myself." And another begins, "It is a somewhat difficult task to describe in words the impressions which have so deeply affected me as to change my entire attitude toward the world in general and children in particular. There is a sort of beautified atmosphere here which can only be due to the beautiful personalities with whom we come in contact. A self-sacrificing life is to me a religion which is hard to find in churches and has a deeper effect upon me than any sermon."

We quote these not to boast but only to give credit where it belongs.

Granting that there is a just noticeably greater amount of "true happiness", "Christian spirit" here than elsewhere, where did it come from? We did not bring it with us. We were all average people when we came. The places we left have not sunk noticeably in the moral scale since we left.

Let another one of our papers answer the question: "The thing that has impressed me most is the influence resulting from work with and for these children—the reflex influence on the teachers and attendants. It seems to develop the very best that is in a man or woman."

That is it. It is the children. It is they who have developed in us whatever of beauty is to be found there.

Fathers, mothers, you have lent us your children to bring our lives to perfection.

Can anybody do a greater thing than that? What does it matter if they are not like other children! They

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